

CLAIMS

1. A method for implementing non-reference frame prediction in video compression comprising the steps of:

(A) setting a prediction flag (i) off if non-reference frames are used for block prediction and (ii) on if non-reference
5 frames are not used for block prediction;

(B) if said prediction flag is off, generating an output video signal in response to an input video signal by performing an inverse quantization step and an inverse transform step in accordance with a predefined coding specification; and

10 (C) if said prediction flag is on, bypassing said inverse quantization step and said inverse transform step.

2. The method according to claim 1, wherein said input video signal comprises a series of macroblocks.

3. The method according to claim 2, wherein said method operates (i) in a first mode if said prediction flag is on and (ii) a second mode if said prediction flag is off.

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4. The method according to claim 3, wherein (i) said first mode comprises an intra prediction mode and (ii) said second mode comprises an inter prediction mode.

5. The method according to claim 4, wherein said inter prediction mode uses information from a previous one of said macroblocks to encode a subsequent one of said macroblocks.

6. The method according to claim 2, further comprising the steps of:

generating an array configured to store which of said modes was used to encode each of said macroblocks; and

5 if said mode information is needed to encode a macroblock, reconstructing the mode used macroblock from the array information.

7. The method according to claim 1, wherein said method reduces complexity on non-reference frame macroblock encoding when non-reference frames are not used for prediction.

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8. The method according to claim 1, wherein said output video signal comprises an H.264 compliant encoded bitstream.

9. The method according to claim 1, further comprising the step of:

reconstructing an I-frame macroblock if said prediction flag is on.

10. The method according to claim 9, further comprising the step of:

skipping said reconstruction step if said prediction flag is off.

11. The method according to claim 1, wherein said prediction flag comprises a constrained intra prediction (CIPF) flag.

12. The method according to claim 1, wherein said method (i) executes a deblocking filtering stage when in a first mode and (ii) skips said deblocking filtering stage when in a second mode.

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13. The method according to claim 1, further comprising the step of:

(D) forcing a decoder to not use intra macroblocks in non-reference frame processing; and

5 (E) skipping step (A) when step (D) is implemented.

14. An apparatus for implementing non-reference frame prediction in video compression comprising:

means for setting a prediction flag (i) off if non-reference frames are used for block prediction and (ii) on if non-
5 reference frames are not used for block prediction;

means for generating an output video signal in response to an input video signal by performing an inverse quantization step and an inverse transform step in accordance with a predefined coding specification, if said prediction flag is off; and

10 means for bypassing said inverse quantization step and said inverse transform step, if said prediction flag is on.

15. The apparatus according to claim 14, wherein said output data stream comprises an H.264 compliant bitstream.